<u>REMARKS</u>

Claims 1, 4-9, 11-16, 18-22, 25-27, 33, 34, 36-42, 44-48 and 50 are pending in the present application. In the Office Action dated December 23, 2005 ("Office Action"), claims 1, 4-9, 11-16, 19-22, 25-27, 33, 34, 36-42, 44-48 and 50 were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,256,692 to Yoda et al. ("Yoda"), U.S. Patent No. 6,098,158 to Lay et al. ("Lay"), and U.S. Patent No. 5,818,182 to Viswanadham et al. ("Viswanadham"). Claims 1, 4-9 and 11-15 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as their invention.

Embodiments Disclosed In The Applicants' Specification Versus The Cited References

The disclosed embodiments of the invention will now be discussed in comparison to the cited references. Of course, the discussion of the disclosed embodiments, and the discussion of the differences between the disclosed embodiments and the cited references subject matter, do not define the scope or interpretation of any of the claims. Instead, such discussed differences merely help the Examiner appreciate important claim distinctions discussed thereafter.

The disclosed embodiments include systems and methods for storing and restoring a machine state of a computer system. In this manner, relatively immediate operation of the computer system upon power-up can be made available, thereby avoiding the need to wait for the typical power-up sequence and boot routine to complete. One embodiment of a computer system includes a central processing unit (CPU) coupled to a memory via a local CPU bus, and further includes a PCI bus coupled to the first bus to provide communication with the CPU and the memory. The system also includes a PC card coupled to the PCI bus and a non-volatile memory for storing machine state information corresponding to the machine state. The PC card further includes a controller coupled to the non-volatile memory to control the storing of data therein and the retrieval of data therefrom. The system may also include a transfer component for directing the controller to coordinate with the CPU access to the non-volatile memory and the memory to store and download the machine state information for capturing and restoring, respectively, a corresponding machine state of a computer system. In addition, a PCI-CardBus bridge is coupled to the PCI bus to provide communication between the PCI bus and

the PC card coupled to the PCI-CardBus bridge. This allows the system to be used with easily removeable conventional PC cards so that the PC card may be moved from system to system to transfer the machine state information. This is advantageous in terms of portability and ease of a system administrator to reboot the state of one machine on a completely different machine.

The cited references do not teach or suggest the above features of the embodiments, nor the desirability of the advantages that are derived therefrom, such as the ease of using a conventional PC card in combination with the other features of the embodiments to create a system that allows the user to easily move a machine state from one computer system to another.

In the Office Action, Yoda was cited for teaching a computer system including a CPU, a local CPU bus coupled to the CPU, a memory coupled to the local CPU bus to store data accessible by the CPU via the local CPU bus, and a PCI bus coupled to the local CPU bus to provide communication with the CPU and the memory via the local CPU bus, and a PC card coupled to the PCI bus. The PC card further includes a controller coupled to the PC card for coordinating with the CPU access to the device. The computer system further includes a PCI-CardBus bridge coupled to the PCI bus to provide communication between the PCI bus and the PC card coupled to the PCI-CardBus bridge.

As pointed out in the Office Action, Yoda does not disclose that the PC card has a non-volatile memory. Nor does Yoda disclose that the PC card has a non-volatile memory for storing machine state information with a controller configured for coordinating with the CPU access to the non-volatile memory and the memory to store and download the machine state information for capturing and restoring, respectively, a corresponding machine state of a computer system. The PC card in Yoda (PC card 20) includes a graphics accelerator and, makes no mention of it having a non-volatile memory, let alone storing machine state information thereon.

To supplement the deficiencies of Yoda, Lay was cited for teaching storing machine state information in a non-volatile memory and a controller coupled to the non-volatile memory for coordinating with the CPU access to the non-volatile memory. Lay does not contain any teaching or suggestion for placing the machine state on a PC card. To further supplement

the deficiencies of both Yoda and Lay, Viswanadham is cited for teaching that a PC card can include non-volatile memory.

The purported motivation to combine the teachings of Yoda, Lay, and Viswanadham is that one of ordinary skill in the art would store the fast boot sequence of Lay on the hard drive of Yoda in order to allow the system to boot up faster. The motivation further includes that Viswanadham teaches placing the fast boot sequence onto the PC card because PCMCIA memory cards are small, lightweight, and do not require drive motors (Viswanadham, col. 1, lines 64-67) and, additionally, because PC cards can be easily transported between multiple computer systems, thus, allowing the multiple systems to operate on a single set of data.

A convincing line of reasoning as to why one of ordinary skill in the art would place the machine state on the non-volatile memory of Viswanadham has not been provided. The teaching cited in Viswanadham that PC cards are small, lightweight, and do not require drive motors does not provide any motivation for placing the machine state stored on the hard drive in Lay on the PC Card of Viswanadham or Yoda. The portion cited in Viswanadham merely emphasizes some commonly known characteristics of PC cards, but provides no reason why these commonly known characteristics would motivate one of ordinary skill in the art to place the machine state on the PC card.

Hindsight has also been employed in constructing the above motivation for combining the teachings of Yoda, Lay, and Viswanadham. A further motivation asserted in the Office Action for placing the machine state of Lay on the non-volatile memory of the PC Card of Viswanadham is that "[PC Cards] can be easily transported between multiple computer systems, thus, allowing the multiple systems to operate on a single set of data, and because PCMCIA was designed for memory cards." However, no portion of any of the cited references has been cited to support the above motivation. No reference has been cited to provide a convincing line of reasoning as to why one of ordinary skill in the art would desire being able to transport machine state information between multiple computer systems. Since Yoda, Lay, and Viswanadham do not provide any motivation or suggestion, the only place the teaching could come from is the Applicants' specification. For example, the Applicants' specification states that "[i]n another application, a user can transport the user's machine state between similar computer systems to provide portability." (Applicants' Specification, Page 10, lines 10-11). The Applicants' own

specification teaches the benefit of being able to conveniently transfer machine state information between multiple computer systems. Accordingly, the use of the Applicants' specification to provide the motivation to combine the references is clearly the use of impressible hindsight.

If the teachings of Yoda, Lay, and Viswanadham are combinable, they teach using the computer system of Yoda with the fast boot sequence of Lay stored on the hard drive of Yoda. Viswanadham only provides a teaching to use a PC card with non-volatile memory in combination with the system of Yoda. However, the fast boot sequence would certainly not be stored on the PC card and would be stored on the hard drive of Yoda.

Rejection Of The Claims Under 35 U.S.C. 103(a)

Turning now to the claims, the patentably distinct differences between the cited references and the claim language will be specifically pointed out. Claim 1 recites "a central processing unit (CPU); a local CPU bus coupled to the CPU; a memory coupled to the local CPU bus to store data accessible by the CPU via the local CPU bus; a PCI bus coupled to the local CPU bus to provide communication with the CPU and the memory via the local CPU bus; a PC card having a non-volatile memory for storing machine state information and further having a controller coupled to the non-volatile memory for coordinating with the CPU access to the non-volatile memory and the memory to store and download the machine state information for capturing and restoring, respectively, a corresponding machine state of a computer system; and a PCI-CardBus bridge coupled to the PC card and the PCI bus to provide communication between the PCI bus and the PC card coupled to the PCI-CardBus bridge." As discussed above, there is no motivation or suggestion in the cited references to store a machine state information on a PC card and to provide a controller configured for coordinating with the CPU access to the non-volatile memory and the memory to store and download the machine state information for capturing and restoring, respectively, a corresponding machine state of a computer system. Only by using the Applicants' own disclosure and, thus, impressible hindsight can the invention of claim 1 be taught by the cited references. Therefore, claim 1 is patentable over the cited references.

Claim 9 recites, in part, "a PC card having a non-volatile memory for storing machine state information and further having a controller coupled to the non-volatile memory for

coordinating with the CPU access to the non-volatile memory and the memory to store and download the machine state information for capturing and restoring, respectively, a corresponding machine state of a computer system; and a PCI-CardBus bridge coupled to the PC card and the PCI bus to provide communication between the PCI bus and the PC card coupled to the PCI-CardBus bridge." Again, the cited references do not provide the motivation or suggestion to store the machine state information on the non-volatile memory of a PC card nor the recited functionality of the controller of the PC card. Therefore, claim 9 is patentable over the cited references for at least this reason.

Claim 16 recites, "An apparatus for capturing and restoring a machine state of a computer system having a central processing unit (CPU) coupled to a memory via a first bus, and further having a PCI bus coupled to the first bus to provide communication with the CPU and the memory, the apparatus comprising: a PC card coupled to the PCI bus, the PC card having a non-volatile memory for storing machine state information corresponding to the machine state, and further having a controller coupled to the non-volatile memory to control the storing of data therein and the retrieval of data therefrom; a transfer component for directing the controller to coordinate with the CPU access to the non-volatile memory and the memory to store and download the machine state information for capturing and restoring, respectively, a corresponding machine state of a computer system; and a bus interface compatible with a CardBus and coupled to the PCI bus, the bus interface further coupled to the non-volatile memory and the controller to transfer data between the non volatile memory and the PCI bus in accordance with a data format and transfer protocol of the PCI bus." The cited references do not provide the motivation or suggestion to store the machine state information on the non-volatile memory of a PC card nor the recited functionality of the controller of the PC card. Therefore, claim 16 is patentable over the cited references for at least this reason.

Claim 22 recites, in part, "a PC card coupled to the PCI bus, the PC card having a non-volatile memory for storing machine state information corresponding to the machine state, and further having a controller coupled to the non-volatile memory to control the storing of data therein and the retrieval of data therefrom; a transfer component for directing the controller to coordinate with the CPU access to the non-volatile memory and the memory to store and

download the machine state information for capturing and restoring, respectively, a corresponding machine state of a computer system." The cited references do not provide the motivation or suggestion to store the machine state information on the non-volatile memory of a PC card nor the recited functionality of the transfer component. Therefore, claim 22 is patentable over the cited references for at least this reason.

Claim 33 recites, in part, "a CardBus compatible PC card coupled to PCI-CardBus bridge, the PC card having a non-volatile memory for storing machine state information corresponding to the machine state, and further having a controller coupled to the non-volatile memory to control the storing of data therein and the retrieval of data therefrom; a transfer component for directing the controller to coordinate with the CPU access to the non-volatile memory and the memory to store and download the machine state information for capturing and restoring, respectively, a corresponding machine state of a computer system." Again, the cited references do not provide the motivation or suggestion to store the machine state information on the non-volatile memory of a PC card nor the recited functionality of the transfer component. Therefore, claim 33 is patentable over the cited references for at least this reason.

Claim 38 recites the acts "capturing the machine state of the computer system via a controller coupled to a non-volatile memory to control the storing of data therein and the retrieval of data therefrom; transferring machine state information corresponding to the captured machine state from the computer system to a PC card operably configured with the non-volatile memory; storing the machine state information in the non-volatile memory in order to restore the stored machine state when the machine state information is provided to a computer system; and wherein transferring the machine state information to the PC card comprises transferring data from the CPU and the memory to the PC card in accordance with a CardBus protocol. The combination of the cited references does provide the motivation to perform the recited acts above and, in particular, transferring the machine state information to the PC card.

Claim 45 recites, in part, "identifying machine state information corresponding to the machine state to which the computer system is to be restored stored in a non-volatile memory included in a PC card; transferring the machine state information from the non-volatile memory to the computer system via a controller coupled to the non-volatile memory to control the storing

of data therein and the retrieval of data therefrom." Again, the combination of the cited references does provide the motivation to perform the recited acts above and, in particular, transferring the machine state information from the non-volatile memory of the PC card to the computer system.

Claims depending from claims 1, 9, 16, 22, 33, 38, and 45 are also patentable due to depending from a patentable base claim and further in view of the additional limitations recited in the dependent claims.

Rejection Of The Claims Under 35 U.S.C. 112, ¶2

Claims 1, 4-9, and 11-15 were rejected under 35 U.S.C. 112, second paragraph. Independent claims 1 and 9 have been amended to more precisely recite that the PC card is coupled to the PCI-CardBus Bridge and the PCI-CardBus bridge is coupled to the PCI bus. Accordingly, the rejection under 35 U.S.C. 112, second paragraph should be withdrawn.

Objection To Claim 5

Claim 5 is objected to because the status identifier is purportedly incorrect. Applicants believe that the status identifier of "previously presented" accurately reflects the status of claim 5 because it has been previously amended. Therefore, the objection to claim 5 should be withdrawn.

All of the claims remaining in the application are now clearly allowable. Favorable consideration and a timely Notice of Allowance are earnestly solicited.

Respectfully submitted,

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